LOT-1: CIVIL and HYDROMECHANICAL WORKS

Answer to Contractor's queries no 2

1. According to the site investigation, the diversion tunnel will be constructed by other contractor. Please clarify when the diversion tunnel is capable of watering?

   Answer:
   Another contractor is excavating the diversion tunnel except for the last 20m upstream. Completion of the diversion tunnel excavation an d support o f the entire tunnel to meet the discharge requirements, the tunnel lining, the construction of the portals and of the downstream connection to the river are within the scope of works of this Contract.

2. Please provide us with diversion tunnel's watering capacity curve.

   Answer:
   Please refer to DRG No. MBK-HW-202 and MBK-HW-203 and to the Addendum No. 1.

3. ADIT 1 has been completed by other contractor according to site investigation. Whether ADIT 2 will also be constructed by other contractor? If yes, please identify the date when it will be submitted to the contractor of this bidding.

   Answer:
   Excavation and temporary support of Adit 1 has been executed by another contractor; it's maintenance, improvements and operation during the construction time and the construction of Adit 2 are within the scope of works of this Contract.

4. The employer will provide 2 MW power for the contractor according to site investigation. Please identify the specific power supply point and specific time for provision of the power.

   Answer:
   The Bidders shall note that in accordance with Section 14 "Site Facilities and Services to be provided by the Contractor" of the General Specifications from

MBK JCL
ESTD 2010

Volume 2, this Contractor shall supply electricity for all of his own operations, services and accommodation buildings throughout the duration of the Contract, all the costs of which are deemed to be included in the Contract Price. This shall include the supply of construction power for the Lot 2 contractor's operations, services, offices and accommodation buildings throughout the duration of the Lot 2 Contract.

5. The relief map Headworks Area Layout a3_1000 (13) in the Volume IV Topo map of the Tender document is exactly the same as the one after it, we need the correct map of Headworks Area Layout a3_1000 (13) (the item should be 52, and the Key Plan should be Region 4).

   Answer:
   Auto CAD drawing has already been provided through Addendum No. 1. Please refer to that.

6. Please supply word Documents of Attachment 1.

   Answer:
   It shall not be provided.

7. Please supply word documents of Attachment 2.

   Answer:
   It shall not be provided.

8. Please supply AutoCAD documents of Attachment 3.

   Answer:
   It has already been provided in Addendum No. 1.

9. Spillway Radial Gate/ Under sluice Radial gate (DRG no.MBK-HW-209/210):
   a) In the Elevation Detail for the said gate, the details are shown with Anchorages. Please specify the type of Anchorages; Is it pre stressed with cables/ Anchor rods.

      Answer:
      The design of the same is in the scope of the Bidder.

MBK JCL
ESTD 2010
मध्य भोटेकोशी जलविद्युत कम्पनी लिमिटेड

b) Width of Abutment pier, width of intermediate pier and Elevation of the top of Pier. Plan view indicating the width of gate.

Answer:
The detailed dimensions of the Civil Works on the Tender Drawings are indicative. The EPC/Turnkey Contractor shall design and detail the Civil Works during the implementation of the Contract and shall determine their final dimensions.

The dimensions of the Hydromechanical Works are indicated in the Hydromechanical Specifications and the Technical Data Sheets (Hydromechanical).

c) Also confirm the location of power pack to be placed.

Answer:
The location of the power pack at the weir is at the Service Building; please refer to DRG no. MBK-HW-203 of Addendum No 1.

d) Also confirm the location of Hoist Trunnion.

Answer:
The answer to Question b above also applies to this question.

e) How the Flap gate is going to be opened, provided in the under sluice radial gate.

Answer:
The hoist is hydraulic; see Volume 3, Hydromechanical Specifications, Section 12.2.1.

10. Desanding Outlet Stoplog Detail (DRG no. MBK-HW-214):

a) The width of clear opening is stated as 4.25m in the above drawing. But in drg no. MBK-208-E, under Sec-EE, it is mentioned as the size of Desanding Intake Stop Log as 6 numbers 5.5 X 4 m. Please review and confirm.

Answer:
The dimensions of the Hydromechanical Works are indicated in the Hydromechanical Specifications and the Technical Data Sheets (Hydromechanical).

MBK JCL
ESTD 2010
मध्य भोटेकोशी जलविद्युत कम्पनी लिमिटेड

b) In the Cross section Detail for the said Gate, the details are shown with wheels connected to the main plates whereas the description in the technical specification states that gates are to be designed as a slide gate. Please review and confirm. Also please indicate the dimension between rails.

Answer:
The requirements of the Hydromechanical Specifications prevail. The gates are sliding gates.

11. Desanding Inlet Stop log Detail (DRG no. MBK- HW- 213):
In the Cross section detail for the said gate, the details are shown with wheels connected to the main plates, whereas the description in the technical specification states that gates are to be designed as a slide gate. Please review and confirm.

Answer:
The requirements of the Hydromechanical Specifications prevail. The gates are sliding gates.

12. Clause no. 3.4.1 Page 79 states that the seals for the following shapes are required: for top seal- Double stem, lateral Seal – P-Shaped rubber and Bottom seal- strip Rubber.
As the clear height of opening is 4.0 meters, there should be a provision of concrete slab to receive Top Seal construction in the civil structure for accommodating the top seal. Please review and confirm.

Answer:
No top seal is required for both the inlet and outlet stoplogs, and Amendment of Sections 3.4.1 and 4.4.1 (Desander Outlet Stoplog) will be issued in Addendum No. 2

13. Spillway radial gate/Under sluice Radial Gate
a. DRG no. MBK- HW-209/210
Position of Top Seal with its Elevation may please be got confirmed for both the radial gates.

Answer:
The Top Seal in both type of Radial Gate is not needed (see Vol 3, Hydromechanical Equipment).

MBK JCL
ESTD 2010
एक परियोजना जलविद्युत कम्पनी लिमिटेड

14. Spillway Radial Gate/Under sluice Radial Gate: DRG no. MBK-HW-209/210
The elevation indicating the top of pier is very much required to find out the stroke length of cylinder. To get a minimum stroke length, the position of trunnion point shall be of the order 6 meters from the centre line of trunnion for Spillway Radial Gate. For Under sluice Radial Gate the position of trunnion point shall be still more, since the height of Gate is still more. Please examine and confirm.

Answer:
The positions of the trunnions in DRG no. MBK-HW-209/210 are only indicative. The detailed dimensions of the Civil Works on the Tender Drawings are indicative. The EPC/Turnkey Contractor shall design and detail the Civil Works during the implementation of the Contract and shall determine their final dimensions.

15. In the Geology and Geotechnical Report - Main Report no information is found regarding underground water conditions and expected water inflow at weir location (i.e. permeability the HRT, penstock tunnel and shafts as well as at the PH). Is some information available?

Answer:
The numbers of test conducted at Headworks, Surge Shaft, and Powerhouse is given in Appendix D and F of additional information.

16. Geological longitudinal profile GEO-905 and Annex A to the Geology and Geotechnical Report regarding Tunnel 2 are discrepant about the geological conditions: in this later document, quartzite formation is considered on the top of the mountain and a significant quartzite bank within the phyllite formation intercepts the tunnel, which are not reported in the GEO-905. Please, clarify.

Answer:
Officially we have not issued the drawing number GEO-905, please verify it.

17. In the drawing no MBK-HRT-403 the invert concrete lining, 200mm thick, is represented in all sections (type I, II, III, IV, V), that means it is extended over the total length of HRT (about 7100m). In the BoQ "Reinforced concrete tunnel lining per linear meter of tunnel length" is defined for a total length of 3150m (items 1.2.13, 1.3.13, 1.4.13 and 1.5.13). Referred to the definition given in BoQ, how the Invert Concrete Lining shown in the drawings has to be considered?

MBK JCL
ESTD. 2010
जलविद्युत कम्पनी लिमिटेड

Answer:
Invert lining, along the reinforced concrete lining portion, shall be considered as reinforced concrete lining.

18. The tunnel lining in the BOQ is defined "Reinforced concrete tunnel lining per linear metre of tunnel length" and comes in the items 1.2.13, 1.3.13, 1.4.13 and 1.5.13 for a total of 3'150 m. Geological and Geotechnical Report refers and reports computations for concrete lining only for class V along section 2'350 to 2'550 (200m length). In the drawing no MBK-HRT-403 a concrete backfilling and concrete cover, 100mm thick, is represented in section type V only. Referred to the information given in the Geological and Geotechnical Report and in the drawing MBK-HRT-403, how the BoQ concrete lining extension of 3150m has to be considered?

Answer:
BoQ concrete lining is considered as per geological condition and Clause 2.18 (Particular Requirements for Individual Concrete Structure).

19. Please clarify how to intend the bolting system mentioned in the Geology and Geotechnical Report, figure MBK-GEO-4.12, and the relevant concrete thickness 0.45 m mentioned in the second above paragraph and relate these measures to the "post-excavation support of medium steel rib spaced at 0.5m covered with 50cm thick concrete lining" as mentioned in the just above paragraph. Please clarify the support measures shown in the drawings MBK-HRT-403 and MBK-GEO-905 for class V.

Answer:
Officially we have not issued the drawing number GEO-905, please verify it.

20. Drainage drilling and grouting: design reports and drawings report drainage drilling and grouting to be done according to the local conditions. The BOQ doesn't report the relevant items and quantities. Please clarify.

Answer:
The BoQ doesn't report the relevant items and quantities because the work specified comes under the contractor responsibility.

21. Geology Geotechnical Report indicates permanent support pressures (Table 11) of the order of 270-730 kPa. The ground reaction curves in Appendix C for the

sections ch 800-1300 and 5'300-5'560 let suppose radial convergences in the order of 150-300 mm. Please clarify the requirements with regard to free internal tunnel section after convergence and in terms of integrity of the shotcrete shell during and after said convergences are developed.

Answer:
The free internal tunnel section should be as per support type V section (very poor rock condition).

22. Headrace Tunnel - The foreseen tunnel internal (finished) dimensions as well as the excavation profile per each rock class shown in drawing MBK-GEO-905 rev. 00 and drawing MBK-GEO-HRT-4 rev. 00 are different. Could you please clarify the final inner dimensions and/or the dimensions of the tunnel excavation?

Answer:
Officially we have not issued the drawing number GEO-905, please verify it.

23. With reference to Vol.2, General Specifications, Par. 20-Interface Details, Lot 1 Contractor shall supply the electrical power and water to Lot 2 Contractor. Which is the reference power supply requirement of Lot 2 contractor during the project construction period both at Weir/Desander and Powerhouse jobsites?

Answer:
The capacity of power supply required for powerhouse is approximately 200KW and for weir/Desander is approximately 20KW.

24. In the document Geological and geotechnical report, p.43, "Above analysis indicates that the tunnel excavation will have remarkably high deformation/displacement demanding heavy rock support (Figure MBK-GEO 4:11). Hence, both pre-excavation and post excavation support are recommended for this part. Pre-excavation support consists of 6 m long, 25 mm diameter forepoling, spaced at 15 - 30 cm, with 50% of overlap. Additionally, umbrella grouting is also considered. The pre-excavation support system helps reduce the vertical stress in tunnel perimeter and improve the strength of the material. Similarly, post excavation support consists of closed ring of steel ribs at spacing 0.25 - 0.5 m, tied together with steel bars. Later, 0.5 m thick concrete will cover the steel ribs". None of these measures are indicated in the relevant drawings HRT-403 and GEO-905 and no 0.5 m thick concrete layer is shown. Please clarify.

MBK JCL
ESTD 2010

Answer:
Officially we have not issued the drawing number GEO-905, please verify it.

25. In the document Geological and geotechnical report, p.43, consolidation grouting is mentioned, as also for class IV in table 10 at p.39 of the same document. The relevant quantities are not mentioned in the BOQ. Please clarify.

Answer:
It is under contractors' responsibility and should be performed as per construction drawing and according to the local conditions (Vol. 3, Section 5).

26. In the Addendum 1, Q&A, Answer 7 it is stated that "Employer shall provide the land for site installations". In order to assess the capacity of the provided areas, the distances from construction sites and the necessity of any access road, please inform about the exact location, dimension and shape of the identified areas.

Answer:
The necessary land for site installations shall be in the periphery of 5km.